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⑤④ **Applicator for crease setting composition.**

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Description

This invention relates to an applicator, particularly for the formation of durable creases by application of a crease setting composition.

In order to form durable creases in a textile article, for example in trousers or slacks, the setting composition may be introduced into the formed creases, for example according to UK patent no. 1 603 252 or European published application no. 67 528. The creases are made durable by curing the composition. In these specifications, the applicator is operated by hand, and has a nozzle on one end of a cylinder. The composition filling the cylinder is compressed by a piston within the cylinder, and is forced through the nozzle. The piston is moved by the rotation of a rotary member mounted on the lower portion of the other end of the cylinder in response to movement along the creased line.

Where trousers made of very lightweight material are to be treated, the normal creasing composition cannot be employed since its viscosity is such that, although perfectly satisfactory for normal to heavyweight materials it can "strike through" to the front surface of lightweight materials. Thus a different crease setting composition, or resin, has to be employed which will not strike through. Such a resin is available but has a higher viscosity than the normally used composition. This means that more effort is needed to expel it through the nozzle. Since the driving force is obtained by pressure of a rotary member on the fabric of the trousers this can cause the fabric to ruck up or otherwise distort, thereby destroying the precision necessary to produce an accurate crease line. GB-A-2 158 159 (published after the priority date of this application) provides an applicator for crease setting composition which comprises an applicator body having at one end thereof a nozzle for applying the crease setting composition into a crease line and at the other end thereof an inlet for compressed air for forcing the composition out of the nozzle, and guidance means mounted beneath the body adapted, in use, to depend into the crease line so as to guide the applicator nozzle to cause it to deliver composition accurately into the crease. Thus, in this publication, the means of expelling the crease setting composition is compressed air and no driving force need be generated by contact of driving wheels with the garment to be crease stabilised. Although originally designed to cope with higher viscosity resins and/or lightweight garments, the system also has advantages when used with any garments and/or with the lower viscosity resins ordinarily employed.

The above system has certain advantages in practice but it is necessary for the operator to control the supply of compressed air to the applicator and to this end a switch is provided which the operator must use in conjunction with the movement of the applicator over the garment to be treated so as to turn on and off a solenoid valve controlling the supply of compressed air to the

applicator. Thus the operator must control the operation of the applicator in relation to the garment and independently control the supply of compressed air using the switch provided.

5 GB-A-1 371 662 discloses a pneumatic dispensing tool in which air pressure is applied to a moveable cap under the control of a manual button. When the button is released the pressure on the cap is relieved via an exhaust port.

10 EP-A-67 528 discloses a crease setting applicator which comprises an applicator body having at one end thereof a nozzle for applying crease setting composition into a crease line, and guidance means mounted beneath the body so as to guide the applicator nozzle and cause it to deliver composition accurately into the crease. Thus the features of the pre-characterising part of the present independent claim are known from this document.

20 The present invention seeks to provide an improved form of applicator in which the supply of compressed air is controlled automatically without there being need of a separate switch and associated electrical circuitry.

25 The present invention is characterised in that at the other end of the applicator body there is an inlet for compressed air for forcing the composition out of the nozzle and in that the guidance means is operatively connected to a valve in the compressed air circuit such that when the guidance means contacts the garment to be treated pressure is applied to the composition by the compressed air and when the guidance means is removed from the garment to be treated the pressure is removed from the composition.

30 In one preferred embodiment the guidance means may be a pair of rollers or wheels similar to those on the device shown in European publication 67 528. The guide wheels are mounted on an axle in a block mounted for reciprocation within the applicator body. The distal end of the block carries a valve for the compressed air. The valve may be in the inlet of compressed air or, preferably, in a connection from the interior of the applicator body to a vent for compressed air.

35 When the applicator is placed on a garment to be treated the guide wheels contact the garment (or the support on which the garment is located) causing the block to move within its mounting and operate the compressed air valve thus causing pressure to be applied to the crease setting composition which will therefore be expelled from the nozzle. Removing the applicator from the garment has the opposite effect since the block will then, under the action of the compressed air, slide in the opposite direction thereby opening the valve and relieving the pressure from the composition.

40 The invention will be described further, by way of example, with reference to the accompanying drawing, in which;

45 Figure 1 is a sectional view of an embodiment of an applicator in accordance with the invention; and

Figure 2 is a similar view to figure 1 of another embodiment.

Referring to the drawings, and in particular figure 1, the applicator illustrated is in some respects similar to the applicator illustrated in figure 1 of European patent no. 67 528 in that the applicator generally designated 10 comprises a reservoir 12 in the form of a moulded plastic cartridge body having a nozzle 14 which, in use, depends into the crease line of a garment being treated. The reservoir 12 may be in the form of a replaceable cartridge and contains a crease setting composition, for example a curable silicone rubber compound, or a curable polyurethane compound. The cartridge 12 is a slidable fit onto a shaped support block 16. The block 16 may be made from metal or, preferably, may be a plastics material moulding. Rotatable guide wheels 18 are mounted on an axle 20 held in a reciprocable valve block 22. The block 22 is slidably mounted within the support block 16 and carries at its distal end a valve seat 24.

The block 16 has an inlet 26 for compressed air which may have a suitable coupling for a compressed air line, leading into a central chamber 28 within the block and communicating with the area 30 behind a plunger 32. It will be appreciated that the crease setting composition is to the left of the plunger 32 as illustrated in the drawing, and that air pressure applied within the space 30 causes the plunger 32 to move to the left and expel composition from the nozzle 14.

As mentioned above, the cartridge or reservoir 12 is a slidable fit on the support block 16. In order to locate and retain the cartridge and block 12, 16 together a further valve 34 is provided. This also operates under the pressure of compressed air within the chamber 28 and forces a spigot 36 downwardly through a corresponding hole in the cartridge 12 thereby retaining the cartridge 12 on the block 16. If desired another form of mechanical retention, for example a grub-screw, could be employed but the pneumatic valve arrangement is convenient in that once the air pressure has been released (when the applicator is no longer in use) it is a very simple matter for the operator to remove and replace a spent cartridge 12.

The valve seat 24 on the reciprocable block 22 cooperates with a valve passage 38 leading to an air vent 40, and the block 22 can slide between a position where the passage 38 is shut off to a position (illustrated) where the passage 38 is in communication with the vent 40.

In use, the applicator 10 is connected to an air supply and compressed air is led into the chamber 28. The pressure within the chamber 28 acting through the valve passage 38 forces downwardly the block 22 allowing the air to vent to atmosphere via the vent 40. Under these conditions there is insufficient pressure within the chamber 28 to force the plunger 32 along the cartridge and expel composition.

When the applicator is put in position on a

garment to be creased and the guide wheels 18 brought into contact with the garment, or its support, sufficient pressure is applied (which need not be very great) to move the reciprocable member 22 upwardly causing the valve seat 24 to engage the valve passage 38 and shut it off. The pressure within the chamber 28, and therefore behind the plunger 32, therefore rapidly rises expelling composition through the nozzle 14. The applicator is moved along the crease line depositing the expelled resin accurately in the crease after which the applicator is removed from the garment. At this point the pressure within the chamber 28 acting through the valve passage 38 forces the member 22 downwardly and allows the pressure once again to be vented via the vent 40. Thus at this point the composition ceases flowing through the nozzle 14.

The embodiment shown in figure 2 is generally the same as that shown in figure 1 and like numerals have been used for like parts. It differs in that the guidance means, instead of being wheels 18, comprise a blade or fin 42. The latter locates within the crease line of the garment being treated and accurately guides the applicator so that the nozzle 14 deposits a precise line of setting composition within the crease. The block 22 operates as described above.

The apparatus of the invention provides a simple and elegant means of ensuring automatic control of the application of resin without requiring the operator independently to control the compressed air supply. With the present invention the compressed air supply is left on and bringing the applicator to the garment ensures that composition is expelled exactly for the period when it is required and is shut off again when it is not required. The associated switch and electrical system including the solenoid may therefore be dispensed with leading to economies as well as more accurate control. Since the composition is turned off and on precisely when required savings in resin are made and more garments per cartridge may be treated.

Claims

1. A crease setting composition applicator which comprises an applicator body (12, 16) having at one end thereof a nozzle (14) for applying a crease setting composition into a crease line, and guidance means (18, 42) mounted beneath the body so as to guide the applicator nozzle and cause it to deliver composition accurately into the crease, characterised in that at the other end of the applicator body there is an inlet (26) for compressed air for forcing the composition out of the nozzle and in that the guidance means is operatively connected to a valve (24) in the compressed air circuit such that when the guidance means contacts the garment to be treated pressure is applied to the composition by the compressed air and when the guidance means is removed from the garment to be treated the

pressure is removed from the composition.

2. An applicator as claimed in claim 1 in which guidance means (18, 42) comprises a pair of rollers or wheels (18) mounted on an axle (20) so placed that, in use, they all straddle the crease to be treated.

3. An applicator as claimed in claim 1 in which the guidance means (18, 42) comprises a fin or blade (42) mounted beneath the applicator so as to depend into the crease to be treated.

4. An applicator as claimed in any of claims 1 to 3 in which the guidance means (18, 42) are mounted on a block (22) in turn mounted for reciprocation within the applicator body, the distal end of the block carrying the valve (24, 38) for controlling the supply of compressed air.

5. An applicator as claimed in claim 4 in which the valve (24, 38) controls a connection from the interior of the applicator body to a vent (40) for compressed air.

6. An applicator as claimed in any of claims 1 to 5 in which the applicator body (12, 16) comprises a removable cartridge (12) fitted on a support block (16).

7. An applicator as claimed in claim 5 in which a further valve (34) is provided operating under pressure of compressed air from within the applicator to force a spigot (36) from the support block (16) to a corresponding hole in the cartridge (12) whereby to retain the cartridge on the block.

Patentansprüche

1. Appliziereinrichtung für eine Bügelfaltenfixierungszusammensetzung, die einen Applizierkörper (12, 16), der an seinem einen Ende eine Düse (14) zum Auftragen einer Bügelfaltenfixierungszusammensetzung in eine Bügelfaltenlinie hat, und eine Führungseinrichtung (18, 42) aufweist, die unterhalb des Körpers montiert ist, um die Applizierdüse zu führen und dafür zu sorgen, daß sie die Zusammensetzung genau in die Bügelfalte abgibt, dadurch gekennzeichnet, daß am anderen Ende des Applizierkörpers ein Einlaß (26) für Druckluft vorgesehen ist, um die Zusammensetzung aus der Düse auszutragen, und daß die Führungseinrichtung betriebsmäßig an ein Ventil (24) in der Druckluftschaltung angeschlossen ist, so daß dann, wenn die Führungseinrichtung mit dem zu behandelnden Kleidungsstück in Kontakt steht, von der Druckluft Druck auf die Zusammensetzung ausgeübt wird, und wenn die Führungseinrichtung von dem zu behandelnden Kleidungsstück entfernt wird, der Druck von der Zusammensetzung weggenommen wird.

2. Appliziereinrichtung nach Anspruch 1, bei der

die Führungseinrichtung (18, 42) ein Paar von Rollen oder Rädern (18) aufweist, die auf einer Achse (20) montiert sind, die so angeordnet sind, daß sie im Betrieb alle die zu behandelnde Bügelfalte überspannen.

3. Appliziereinrichtung nach Anspruch 1, bei der die Führungseinrichtung (18, 42) ein Leitblech oder ein Klingenteil (42) aufweist, das unterhalb der Appliziereinrichtung so montiert ist, daß es in die zu behandelnde Bügelfalte hinein hängt.

4. Appliziereinrichtung nach einem der Ansprüche 1 bis 3, bei der die Führungseinrichtung an einem Block (22) montiert ist, der seinerseits für eine Hin- und Herbewegung innerhalb des Applizierkörpers montiert ist, wobei das distale Ende des Blockes das Ventil (24, 38) zur Steuerung der Zufuhr von Druckluft trägt.

5. Appliziereinrichtung nach Anspruch 4, bei der das Ventil (24, 38) eine Verbindung vom Innenraum des Applizierkörpers zu einer Entlüftungsoffnung (40) für Druckluft steuert.

6. Appliziereinrichtung nach einem der Ansprüche 1 bis 5, bei der der Applizierkörper (12, 16) eine abnehmbare Patrone (12) aufweist, die auf einen Trägerblock (16) paßt.

7. Appliziereinrichtung nach Anspruch 5, bei der ein weiteres Ventil vorgesehen ist, das unter dem Druck von Druckluft innerhalb der Appliziereinrichtung arbeitet und einen Zapfen (36) von dem Trägerblock (16) aus in ein entsprechendes Loch in der Patrone (12) hinein beaufschlägt, um dadurch die Patrone auf dem Block festzuhalten.

Revendications

1. Appicateur de composition de fixage de plis, qui comprend un corps d'appicateur (12, 16) pourvu, à une extrémité, d'une buse (14) pour l'application d'une composition de fixage de plis dans une ligne de pli, et des moyens de guidage (18, 42) montés sous le corps de façon à guider la buse d'appicateur et à effectuer la distribution de la composition exactement dans le pli, caractérisé en ce que, à l'autre extrémité du corps d'appicateur, il est prévu une entrée (26) d'air comprimé pour chasser la composition hors de la buse, et en ce que les moyens de guidage sont activement reliés à une valve (24) placée dans le circuit d'air comprimé de sorte que, lorsque les moyens de guidage sont en contact avec le vêtement à traiter, une pression est appliquée à la composition par l'air comprimé et, lorsque les moyens de guidage sont éloignés du vêtement à traiter, la pression n'est plus appliquée à la composition.

2. Appicateur suivant la revendication 1, dans lequel les moyens de guidage (18, 42) comprennent deux roues ou galets (18) montés sur un axe

(20) et placés de sorte que, en utilisation, ils chevauchent complètement le pli à traiter.

3. Applicateur suivant la revendication 1, dans lequel les moyens de guidage (18, 42) comprennent une ailette ou une lame (42) montée sous l'applicateur de façon à descendre dans le pli à traiter. 5

4. Applicateur suivant l'une quelconque des revendications 1 à 3, dans lequel les moyens de guidage (18, 42) sont montés sur un bloc (22) lui-même monté en va-et-vient dans le corps d'applicateur, l'extrémité distale du bloc portant la valve (24, 38) pour commander l'admission d'air comprimé. 10 15

5. Applicateur suivant la revendication 4, dans lequel la valve (24, 38) commande une communication entre l'intérieur du corps d'applicateur et un évent (40) pour l'air comprimé. 20

6. Applicateur suivant l'une quelconque des revendications 1 à 5, dans lequel le corps d'applicateur (12, 16) comprend une cartouche amovible (12) montée sur un support (16). 25

7. Applicateur suivant la revendication 5, dans lequel une autre valve (34) est prévue pour fonctionner sous la pression de l'air comprimé contenu dans l'applicateur, de manière à pousser un ergot (36) du support (16) dans un trou correspondant de la cartouche (12) afin de retenir la cartouche sur le support. 30 35

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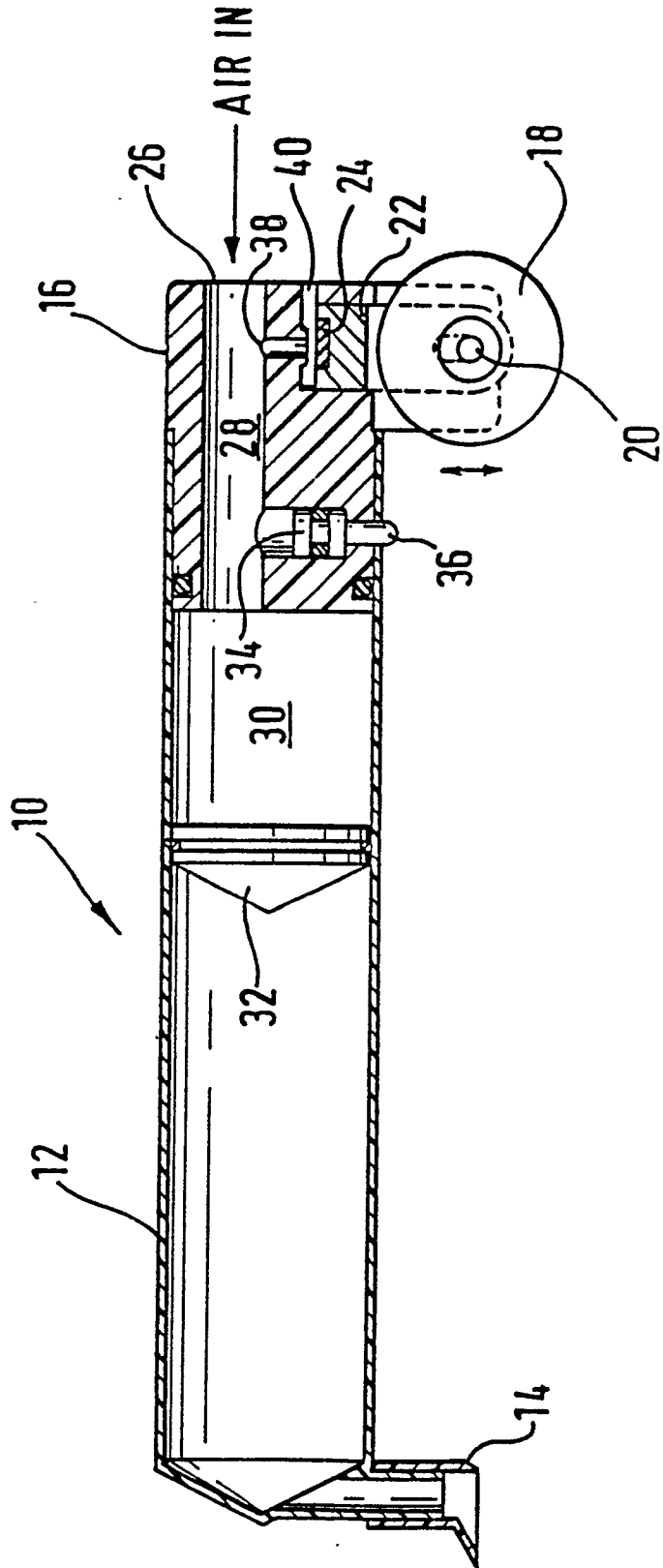


Fig.1.

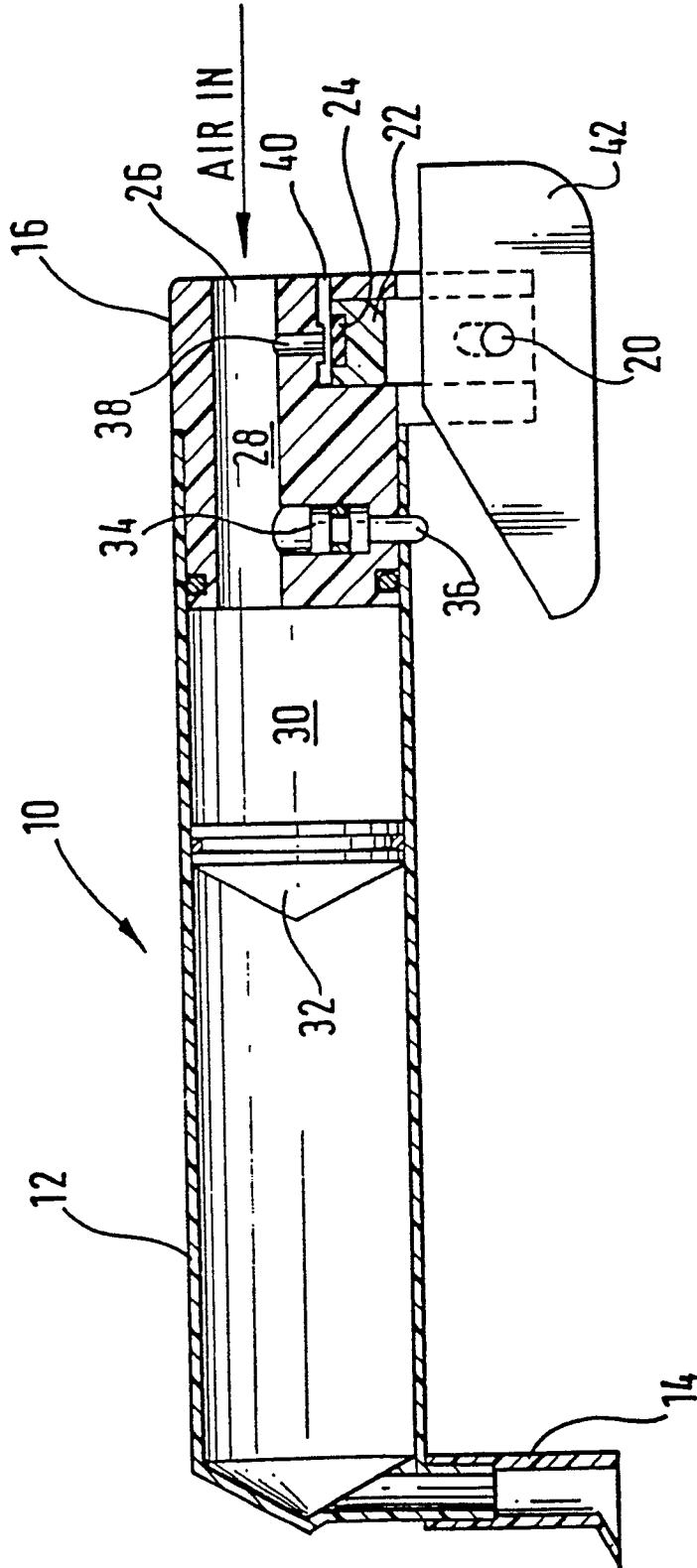


Fig.2.